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PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

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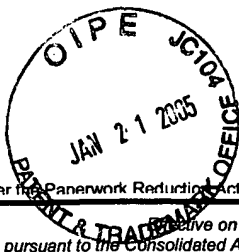
TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/715,319	
	Filing Date	Nov. 17, 2003	
	First Named Inventor	Fred D. LANG	
	Group Art Unit	2857	
	Examiner Name	Manuel L. BARBEE	
Total Number of Pages in This Submission	8 + 456	Attorney Docket Number	11700

ENCLOSURES (check all that apply)				
<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement 3 SB08, 16 tech. articles, Pg 3+456 <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for a Patent) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Letter, Pages 2. Cert. of Mailing & Post Card.		
<table border="1"><tr><td>Remarks</td><td>Note: PTO forms plus letter are 8 pages. 16 technical articles consist of approximately 456 pages. Please expedite this transmittal to the examiner.</td></tr></table>			Remarks	Note: PTO forms plus letter are 8 pages. 16 technical articles consist of approximately 456 pages. Please expedite this transmittal to the examiner.
Remarks	Note: PTO forms plus letter are 8 pages. 16 technical articles consist of approximately 456 pages. Please expedite this transmittal to the examiner.			

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	FRED D LANG, pro se Applicant
Signature	
Date	JANUARY 14, 2005

CERTIFICATE OF TRANSMISSION			
I hereby certify that this correspondence is being deposited with FedX addressed to: Patent & Trademark Office, 220 20th Street South, Customer Window, Mail Stop Amendment, Crystal Plaza Two, Lobby, Rm 1B03, Arlington, VA, 22202 1/14/2005			
Typed or printed name	FRED D LANG		
Signature		Date	1/14/2005

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PTO/SB/17 (12-04v2)

Approved for use through 07/31/2006. OMB 0651-0032

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).**FEE TRANSMITTAL**
For FY 2005☒ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 180.00**Complete if Known**

Application Number	10/715,319
Filing Date	Nov. 17, 2003
First Named Inventor	Fred D. LANG
Examiner Name	Manuel L. BARBEE
Art Unit	2857
Attorney Docket No.	11700

METHOD OF PAYMENT (check all that apply)☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☐ Deposit Account Deposit Account Number: _____ Deposit Account Name: _____

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below☐ Charge fee(s) indicated below, except for the filing fee☐ Charge any additional fee(s) or underpayments of fee(s)
under 37 CFR 1.16 and 1.17☐ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 (including Reissues)

Fee (\$)	Small Entity Fee (\$)
50	25

Each independent claim over 3 (including Reissues)

200	100
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Multiple dependent claims

360	180
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Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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- 20 or HP = _____ x _____ = _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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- 3 or HP = _____ x _____ = _____

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
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- 100 = _____ / 50 = _____ (round up to a whole number) x _____ = _____

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Fees Paid (\$)

Other (e.g., late filing surcharge): _____

Submission of IDS (Fee Code 1806)

\$180.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	Telephone 415-455-0100
Name (Print/Type)	FRED D. LANG, pro se Applicant		Date Jan. 14, 2005

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In regards	Application of Fred D. Lang)	GAU: 2857
Serial No.	10/715,319)	Examiner:
Filing Date	November 17, 2003)	Manuel L. Barbee
Title:	METHOD FOR DETECTING HEAT)	
	EXCHANGER TUBE FAILURES AND)	
	THEIR LOCATION WHEN USING)	
	INPUT/LOSS PERFORMANCE)	Date of Submittal:
	MONITORING OF A RECOVERY BOILER)	January 14, 2005

U.S. Patent and Trademark Office
220 20th Street South
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Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

INFORMATION DISCLOSURE STATEMENT

Sir:

Applicant herein submits eighteen (18) references that may be material to the examination of this application. These references are cited on three PTO/SB08 forms, attached. In addition, copies of sixteen of these documents are herein enclosed for the convenience of the Examiner. The two references not enclosed are the American Society of Mechanical Engineer's "Performance Test Codes" 4.1 and 4, which are considered common place at any technical library.

All references are in English, including the German standard.

The applicant asks that the Examiner consider these references, and make them of record in the prosecution history.

Should you have any questions please call me at any time at 415-455-0100.

Sincerely,

A handwritten signature in black ink, appearing to read "Fred D. Lang", with a long, sweeping horizontal stroke extending to the right.

Fred D. Lang,

pro se Applicant, and Inventor
of Application 10/715,319.

USPTO Customer No. **40088**.

12 San Marino Drive

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known			
		Application Number	10/715,319		
		Filing Date	Nov. 17, 2003		
		First Named Inventor	Fred D. LANG		
		Art Unit	2857		
		Examiner Name	Manuel L. BARBEE		
Sheet	2	of	3	Attorney Docket Number	11700

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Chapter 18, "Failure Analysis and In-Service Experience - Fossil Boilers and Other Heat Transfer Surfaces" of The ASME Handbook on Water Technology for Thermal Power Systems, P. Cohen, Editor, The American Society of Mechanical Engineers, New York, NY, 1989	
		J. Gommi, "Root Causes of Recovery Boiler Leaks", 1997 Engineering and Papermakers Conference, TAPPI Proceedings, available from TAPPI Press as product code ENG97509, Atlanta, Georgia.	
		D.G. Bauer and W.B.A. Sharp, "The Inspection of Recovery Boilers to Detect Factors That Cause Critical Leaks", TAPPI Journal, September 1991, TAPPI Press, Atlanta, Georgia.	
		"Performance Test Procedure Sodium Based Recovery Units", CA Report No. 84041601, March 1996, TAPPI Press, Atlanta Georgia.	
		"Steam, Its Generation and Use", 40th Edition, Edited by S.C. Stultz and J.B. Kitto, published 1992 by The Babcock & Wilcox Company, Barberton, Ohio (see Chapter 26, page 26-5)	
		American Society of Mechanical Engineers' (ASME) Performance Test Code (PTC) 4.1.	
		American Society of Mechanical Engineers' (ASME) Performance Test Code (PTC) 4.	
		A.B. Gill, Power Plant Performance, Butterworths: London, 1984; Chapter 2, pages 70-77.	
		German standard, "Acceptance Testing of Steam Generators, DIN 1942, DIN DEUTSCHES Institut Fur Normung E.V., February 1994.	
		European standard (draft) prEN 12952-15:1999 (also cited as: CEN/TC 269/WG 3 N 337), "Water-Tube Boilers and Auxiliary Installations - Part 15: Acceptance Tests", November 1999, European Committee for Standardization, Central Secretariat, rue de Stassart, 36, Brussels	

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known	
		Application Number	10/715,319
		Filing Date	Nov. 17, 2003
		First Named Inventor	Fred D. LANG
		Art Unit	2857
		Examiner Name	Manuel L. BARBEE
Sheet 3 of 3	Attorney Docket Number	11700	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		British Standard "Code for Acceptance Tests on Stationary Steam Generators of the Power Station Type", BS 2885:1974, ISBN: 0 580 08136 2	
		D.F. Shanno and K.H. Phua, "Algorithm 500, Minimization of Unconstrained Multivariate Functions", ACM Transactions on Mathematical Software, Vol.2, No.1, March 1976, pages 87-94.	
		D.F. Shanno and K.H. Phua, "Remark on Algorithm 500, Minimization of Unconstrained Multivariate Functions", ACM Transactions on Mathematical Software, Vol.6, No.2, December 1980, pages 618-622.	
		W.L. Goffe, G.D. Ferrier and J. Rogers, "Global Optimization of Statistical Functions with Simulated Annealing", Journal of Econometrics, Vol.60, No.1/2, pp.65-100, Jan./Feb. 1994.	
		A. Corana, M. Marchesi, C. Martin and S. Ridella, "Minimizing Multimodal Functions of Continuous Variables with the 'Simulated Annealing' Algorithm", ACM Transactions on Mathematical Software, Vol.13, No.3, pp.262-280, Sept. 1987.	
		F. James, "A Review of Pseudorandom Number Generators", Computer Physics Communications, Vol.60, pp.329-344, 1990.	
		W.H. Press, S.A. Teukolsky, W.T. Vetterling & B.P. Flannery, Numerical Recipes in FORTRAN 77, The Art of Scientific Computing, Cambridge University Press, Cambridge and New York (1992), Chapter 9.6 on Newton-Raphson Method for Nonlinear Systems of Equations, and Chapter 9.7 on Globally Convergent Methods for Nonlinear Systems of Equations.	
		FD Lang, "Fuel Consumption Index for Proper Monitoring of Power Plants - Revisited", Am. Society of Mech. Engrs., 2002 International Joint Power Generation Conference, Scottsdale, AZ, IJPGC2002-26097.	

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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FRED D. LANG, Applicant

Name of Person This Mailing

Signature of Person This Mailing

Docket No.: 11700
Application No.: 10/715,319
Inventor & Appl.: Fred D. Lang
Title: METHOD FOR DETECTING HEAT EXCHANGER TUBE
FAILURES AND THEIR LOCATION WHEN USING INPUT/LOSS
PERFORMANCE MONITORING OF A RECOVERY BOILER

Total = 8 pages of forms & letter + 456 pages of reference material:

- ___ Transmittal Form, Pages 1
- ___ Fee Transmittal with Fee of \$180 by check #5791; Pages 1
- ___ Letter; Pages 2.
- ___ Information Disclosure Statements by Applicant, PTO/SB/08; Pages 3.
- ___ this Certificate of Mailing w/Postcard for return receipt; Pages 1.
- ___ Sixteen (16) references; Pages 456 (approximately).